CLAIMS

WHAT IS CLAIMED IS:

1. A system for substantially continuously monitoring a strength of narrow pulsed electromagnetic fields, said system comprising:

at least one antenna adapted to detect one or more electromagnetic fields (E-fields) within a range of frequencies and convert the E-fields into radio frequency (RF) signals having energy levels correlated to strengths of the E-fields;

at least one peak power measurement subsystem adapted to determine a peak power level of at least one peak RF signal having a maximum energy level and convert the peak power level to power units; and

a computer based device adapted to utilize the power units output by the peak power measurement subsystem to determine the strength of the E-field correlated with the peak RF signal.

2. The system of Claim 1, wherein the system further comprises at least one broadband equalizer adapted to normalize the energy levels of RF signals output from the antenna across the broad range of frequencies.

3. The system of Claim 2, wherein the system further comprises at least one amplifier adapted to amplify the energy levels of the RF signals output by the broadband equalizer and output the amplified signals to the peak power measurement subsystem.

4. The system of Claim 3, wherein the peak power measurement subsystem comprises at least one RF peak power sensor adapted to measure the energy levels of the RF signals output from the amplifier across a broad range of frequencies and determine the peak power level of the peak RF signal.

5. The system of Claim 4, wherein the peak power measurement subsystem further comprises at least one power meter adapted to convert the peak power level of the peak RF signal to power units.

6. The system of Claim 3, wherein the system further comprises at least one directional coupler adapted to divide each RF signal output by the amplifier into a first portion and second portion and output the first portions to the peak power measurement subsystem.

7. The system of Claim 6, wherein the system further comprises at least one spectrum analyzer adapted to receive the second portions from the directional coupler and provide a frequency reading for each RF signal output by the amplifier.

8. The system of Claim 1, wherein the peak power measurement subsystem is further adapted to measure RF signals across a broad range of frequencies.

9. The system of Claim 1, wherein the antenna is an omni-directional antenna.

10. The system of Claim 1, wherein the antenna is a uni-directional antenna.

11. The system of Claim 1, wherein the computer based device is further adapted to:

determine whether the E-field strength correlated to the peak RF signal exceeds a predetermined level; and

record data pertaining to the peak RF signal when the peak RF signal exceed the predetermined level.

12. The system of Claim 11, wherein the system further comprises an indicator in communication with the computer device, wherein the computer device is further adapted to activate the indicator when the strength of the E-field correlated the peak RF signal exceeds the predetermined level.

13. The system of Claim 1, wherein the system includes two circularly polarized hemispherical antennas adapted to detect one or more E-fields within a broad range of frequencies and convert the E-fields into RF signals having energy levels correlated to strengths of the E-fields.

14. A method for substantially continuously monitoring a strength of narrow pulsed electromagnetic fields, said method comprising:

substantially continuously detecting one or more electromagnetic fields (E-fields) within a range of frequencies utilizing at least one antenna adapted to receive E-fields;

converting the E-fields into radio frequency (RF) signals having energy levels correlated to strengths of the E-fields utilizing the antenna;

determining a peak power level of at least one peak RF signal having a maximum energy level utilizing at least one peak power measurement subsystem;

converting the peak power level of the peak RF signal to power units utilizing the peak power measurement subsystem;

calculating the strength of the E-field correlated with the peak RF signal based on the power units output by the peak power measurement subsystem utilizing a computer based device.

15. The method of Claim 14, wherein the method further comprises normalizing the energy levels of RF signals output from the antenna across the broad range of frequencies utilizing at least one broadband equalizer.

16. The method of Claim 15, wherein the method further comprises:

amplifying the energy levels of the RF signals output by the broadband equalizer utilizing at least one amplifier; and

outputting the amplified signals to the peak power measurement subsystem.

17. The method of Claim 16, wherein determining a peak power level of at least one peak RF signal comprises measuring the energy levels of the RF signals output from the amplifier across a broad range of frequencies utilizing at least one RF peak power sensor included in the peak power measurement subsystem; and

determining the peak power level of the peak RF signal utilizing the RF peak power sensor.

18. The method of Claim 17, wherein converting the peak power level to power units comprises converting the peak power level of the peak RF

signal to power units utilizing at least one power meter included in the peak power measurement subsystem.

19. The method of Claim 16, wherein the method further comprises:

dividing each RF signal output from the amplifier into a first portion and second portion utilizing at least one directional coupler; and

outputting the first portions to the peak power measurement subsystem.

20. The method of Claim 19, wherein the method further comprises:

outputting the second portions to at least one spectrum analyzer; and

providing a frequency reading for each RF signal output from the amplifier utilizing the spectrum analyzer.

21. The method of Claim 14, wherein substantially continuously detecting one or more E-fields comprises at least one of:

substantially continuously detecting one or more E-fields utilizing an omni-directional antenna; and

substantially continuously detecting one or more E-fields utilizing a uni-directional antenna.

22. The method of Claim 14, wherein the method further comprises:

determining whether the E-field strength correlated to the peak RF signal exceeds a predetermined level utilizing the computer based device; and

recording data pertaining to the peak RF signal when the peak RF signal exceeds the predetermined level.

23. The method of Claim 22, wherein the method further comprises activating an indicator, in communication with the computer device, when the strength of the E-field correlated the peak RF signal exceeds the predetermined level.

24. A system for substantially continuously monitoring an electromagnetic intensity of short bursts of electromagnetic waves (E-waves) having frequencies within a broad frequency range, said system comprising:

at least one antenna adapted to detect one or more bursts of E-waves and convert the bursts into radio frequency (RF) signals having energy levels correlated to the intensities of the E-waves;

at least one broadband equalizer adapted to normalize the energy levels of RF signals across the broad range of frequencies;

at least one amplifier adapted to amplify the energy levels of the RF signals output by the broadband equalizer;

at least one RF peak power sensor adapted to measure the energy levels of the RF signals output from the amplifier and determine a peak power level of at least one peak RF signal that has the highest energy level;

at least one power meter adapted convert the peak power level of the peak RF signal to power units; and

a computer based device adapted to utilize the power units output by the peak power measurement subsystem to determine the strength of the E-wave correlated with the peak RF signal.

25. The system of Claim 24, wherein the system further comprises at least one directional coupler adapted to divide each RF signal output by the amplifier into a first portion and second portion and output the first portions to the RF peak power sensor.

26. The system of Claim 25, wherein the system further comprises at least one spectrum analyzer adapted to receive the second portions from the directional coupler and provide a frequency reading for each RF signal output from the amplifier.

27. The system of Claim 24, wherein the antenna is an omni-directional antenna.

28. The system of Claim 24, wherein the antenna is a uni-directional antenna.

29. The system of Claim 24, wherein the computer based device is further adapted to determine whether the E-wave intensity correlated to the peak RF signal exceeds a predetermined level.

30. The system of Claim 29, wherein the system further comprises an indicator in communication with the computer device, wherein the computer device is further adapted to activate the indicator when the intensity of the E-wave correlated to the peak RF signal exceeds the predetermined level.

31. The system of Claim 24, wherein the system includes two circularly polarized hemispherical antennas adapted to detect one or more E-fields within a broad range of frequencies and convert the E-fields into RF signals having energy levels correlated to strengths of the E-fields.